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DeLong Mountain Terminal Study

"Monthly Meeting"

Anchorage, Alaska

July 24, 2002

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Presentation Outline

1. Introduction
2. NW Alaska - Mineral Deposits and Mines
3. The DeLong Mountain Regional Transportation System
4. The DeLong Mountain Terminal Study Status Report

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1. Introduction

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Meeting Purpose

1. Update on activities since October
2. Present upcoming activities

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The DMT Study

The DeLong Mountain Terminal (DMT) Study is a feasibility study for deep draft navigation improvements at the site of the site of the existing DeLong Mountain Terminal in Northwest Alaska

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The DMT Study

- The Corps of Engineers is the federal design and construction agency involved in most federal coastal navigation projects in the U.S.
- The Alaska Industrial Development and Export Authority (AIDEA) and the Corps agreed to be the study partners in Jan 2000.
- Corps of Engineers process involves cost-shared funding for studies, construction, and operations and maintenance.
- The Corps' navigation authority is for dredged channels and breakwaters, which are cost-shared. Shore facilities, docks, piers, floats, and mooring basins are entirely a non-federal expense.

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Federal Agencies

- **The US Army Corps of Engineers *(Corps)* is the lead Federal agency.**
- **The *Corps* is responsible for the study which includes plan formulation, coastal engineering, economics, environmental studies, and report/Environmental Impact Statement preparation.**

  The Environmental Protection Agency *(EPA)* is a cooperating agency for the Environmental Impact Statement because of the potential need for them to designate an Ocean Disposal Site.
- **The National Park Service *(NPS)* is a cooperating agency for the Environmental Impact Statement because the DeLong Mountain Terminal is located within the Cape Krusenstern National Monument.**

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The Non-Federal Sponsor

- **The Non-Federal Sponsor is the Alaska Industrial Development and Export Authority *(AIDEA)*.**
- ***AIDEA* owns the DMT port and the road between the port and the Red Dog Mine.**
- ***AIDEA* provides input to the study through cash contributions and "in-kind" services.**
- **TeckCominco Alaska *(TCAK) (formerly called Cominco)* is the operator of the DMTS port, the road, and Red Dog Mine, and is AIDEA's primary study partner.**
- ***TCAK's* prime engineering consultant is *"AMEC".***
- **The land at the Red Dog Mine and the land at the DMT port is owned by *NANA* .**

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2. NW Alaska - Mineral Deposits and Mines

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Location Map

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NW Alaska Mineral Deposits

- **Red Dog Mining District**
  - World-class base metal mining district
  - Home of the world's largest zinc mine – Red Dog
  - Site of ongoing exploration by Cominco Alaska and others
  - Access to markets through AIDEA's DeLong Mountain Regional Transportation System (DMTS)
- **Arctic and Bornite Mineral Deposits**
  - Promising copper and base metal district
  - No operating mines at present
  - Lacks transportation infrastructure
- **Western Arctic Coalfields**
  - Owned by Arctic Slope Regional Corporation
  - Excellent low-sulfur thermal coal deposits
  - No operating mines at present
  - Lacks transportation infrastructure

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The Red Dog Mine

- Operated by TeckCominco Alaska (TCAK) on land owned by NANA Regional Corporation
- Open pit, fly-in operation
- Shipped first concentrate in 1990
- Major mill expansion '97-98
- Additional mill optimization underway
- In 2002, mill concentrate capacity increases to about 1.5 million swt/year

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3. The DeLong Mountain Regional Transportation System

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The DMTS

AIDEA owns the DMTS. It was built in 1988-89 to stimulate regional industrial development

Currently includes 52 mile road from Red Dog Mine to a shallow-water port

Port facilities include:

- **Concentrate storage and reclaim**
- **Three barge berths**
- **Accommodations and fuel storage**

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DMTS Port Facility

DMTS port facilities load lightering barges and unload general cargo and fuel barges

AIDEA contracts with TCAK to operate the port

Vessel draft limited to about 15-17 ft at the berths.

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Lightering operation

TCAK charters deep-sea vessels to export concentrate to Canada, Asia and Europe. Vessels range from 30,000 (Handy) to 75,000 DWT (Panamax)

TCAK contracts lightering to Foss Maritime. Equipment includes 2 5,500 DWT custom-built barges and 4 tugs.

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Site Conditions

The DMT port location is challenging from every point of view:

- **Unsheltered, open-sea location**
- **Short open water season from early July to late October-early November**
- **Dynamic ice environment**
- **Environmental sensitivity and importance to subsistence hunting**

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Problems with the Existing Port

- Vessels must depart while the Bering Straits are free of ice
- Relatively high operating costs (esp. lightering and fuel)
- Substantial weather delays will a adversely effect concentrate shipments
- Regional fuel and freight costs are high
- Limited vessel draft (15-17 ft)
- Shipping season 90-110 days; waves at the barge lightering dock reduce the shipping season substantially

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4. The DeLong Mountain Terminal (DMT) Study

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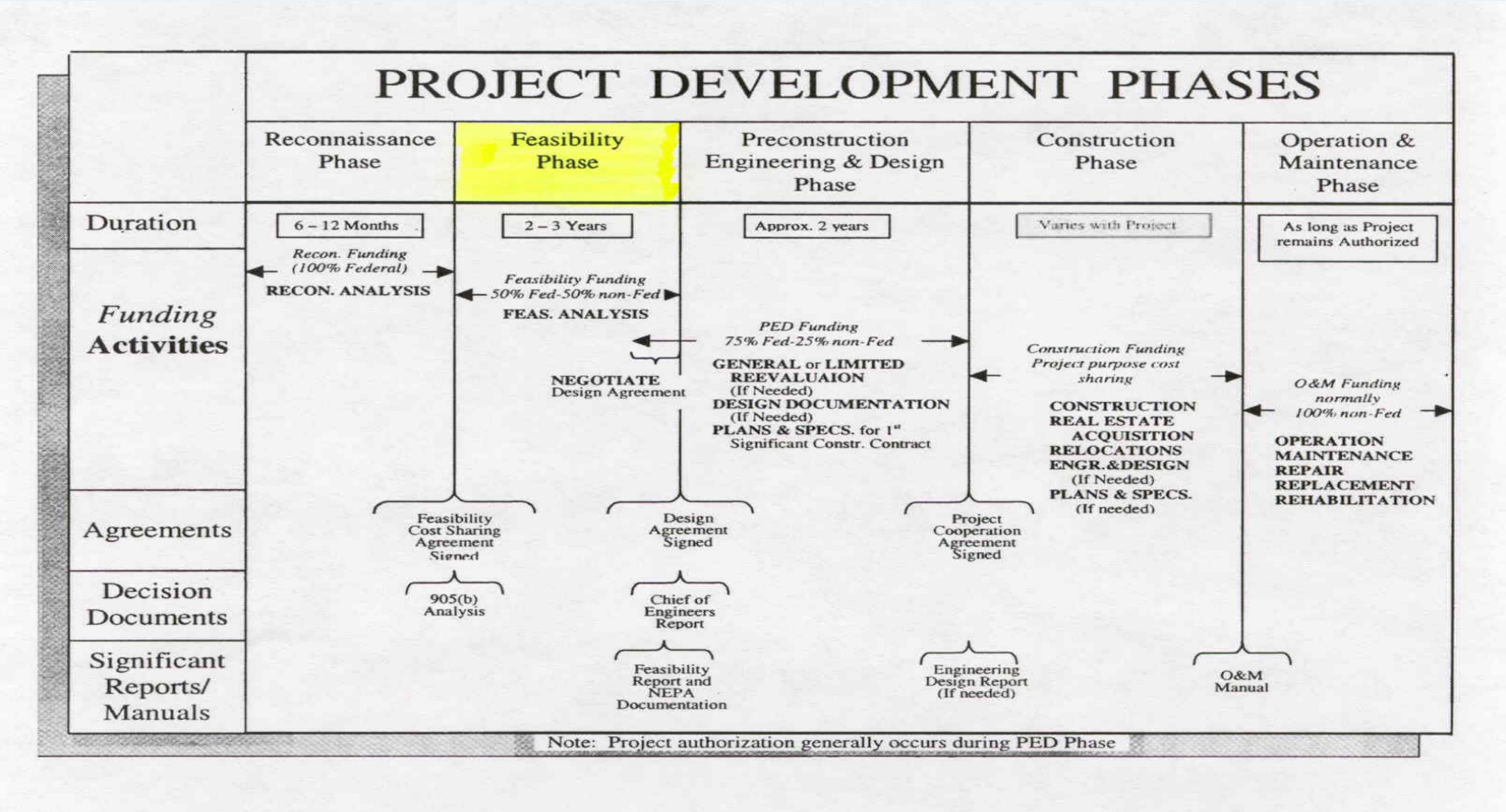
Project Phases



1999 2000 2004 2006 2008

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Feasibility Phase Purpose

- **Purpose of feasibility study is to evaluate deep draft navigation improvements, and determine the plan which best meets the "Principles and Guidelines" of the Water Resources Council and other criteria:**

    a. Based on evaluation of alternative plans

    b. Economically justifiable

    c. Environmental acceptable

    d. Meets coastal engineering design standards

- **Study makes a recommendation to Corps Headquarters and Congress on whether to spend federal funds to proceed with project construction.**

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Project Objectives

- **Increase the efficiency of the water transportation system for moving base metal concentrates, providing opportunities for employment.**
- **Improve the capability and safety, and reduce costs of the existing DMT to handle petroleum products and general cargo.**
- **Provide the capability to improve the delivery of general goods and services to the residents of the Northwest Arctic Borough.**
- **Reduce the current risk of concentrate spills, fuel leakage and spills, and reduce overall marine transits.**
- **Protect the sensitive arctic environment and mitigate significant project impacts where reasonable.**
- **Reduce regional transportation costs, developing DMT as an element of the DMTS for future development activities.**
- **Provide port service to support Northwest Alaska Development and reduce regional cost of living.**

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Alternatives Considered

Three alternative strategies to improve marine transportation for base metal concentrates:

- **Strategy 1 - Create a new port at another location**
- **Strategy 2 - Switch modes of material transport**
- **Strategy 3 - Provide improvements at the DMT**

Alternatives Considered, Cont.
Strategy 1 – Create a New Port at Another Location

New Port Sites Considered:

Northwest Arctic

- **Omalik Lagoon, Singdalik Lagoon and Tugak Lagoon**
- **VABM 17**
- **Hotham Inlet**
- **Cape Blossom**

West/Central Alaska

- **Port Clarance**
- **Cape Nome**
- **Cape Darby**
- **Tyonek/North Forland**
- **Seward**

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Alternatives Considered, Cont.

Strategy 2 – Switch Modes of Material Transport

Alternative Transportation Modes Considered

- **Put concentrates in shipping containers**
- **Lighter aboard ship filled with concentrate**
- **Ship concentrate in a slurry instead of powdered**

Alternatives Considered, Cont.

Strategy 3 – Improvements at DMT

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DMT Improvements Considered

- **Lightering barge-based system improvements**
- **Change to deep-draft vessel direct load system**

Alternatives Considered, Cont.

Strategy 3 – Improvements at DMT

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Lightering barge-based systems

- **Surplus tanker modified as transshipment Island**
- **Single bargeloader with third barge**
- **Second bargeloader with third barge, fourth and/or fifth barge**
- **Extend trestle to serve ocean going barges**
- **Causeway protecting barge loading berths**
- **Breakwater protecting barge loading berths**

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Alternatives Considered, Cont.

Strategy 3 – Improvements at DMT

Deep Draft Vessel Direct Load System

- **Causeway with enclosed conveyor and dredging**
- **Trestle with enclosed conveyor and dredged channel**
- **Cable-stayed bridge supporting enclosed conveyor and dredged channel**
- **Aerial tramway with closed buckets and dredged channel**
- **Tunnel with conveyor and dredged channel**

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Detailed Project Alternatives

- **No Action (Future Without Corps Participation)**
- **Single Bargeloader with Third Barge**
- **Breakwater Protecting Barge Loading Berths**
- **Trestle to Deep-Draft Berth with Dredging**
- **Tunnel to Deep-Draft Berth with Dredging**

No Action Alternative
Future Without Corps Participation

- **Advantages**
  - Continue existing conditions
  - Continue existing two-barge lightering system

- **Disadvantages**
  - Does not eliminate double handling of concentrate over water
  - Could increase marine tug and barge traffic were mine output to increase, i.e. more tugs and barges
  - Does not provide for a 3rd party base metal mine, coal, or increased fuel or increased general cargo
  - Existing concentrate loading operation remains inefficient and expensive

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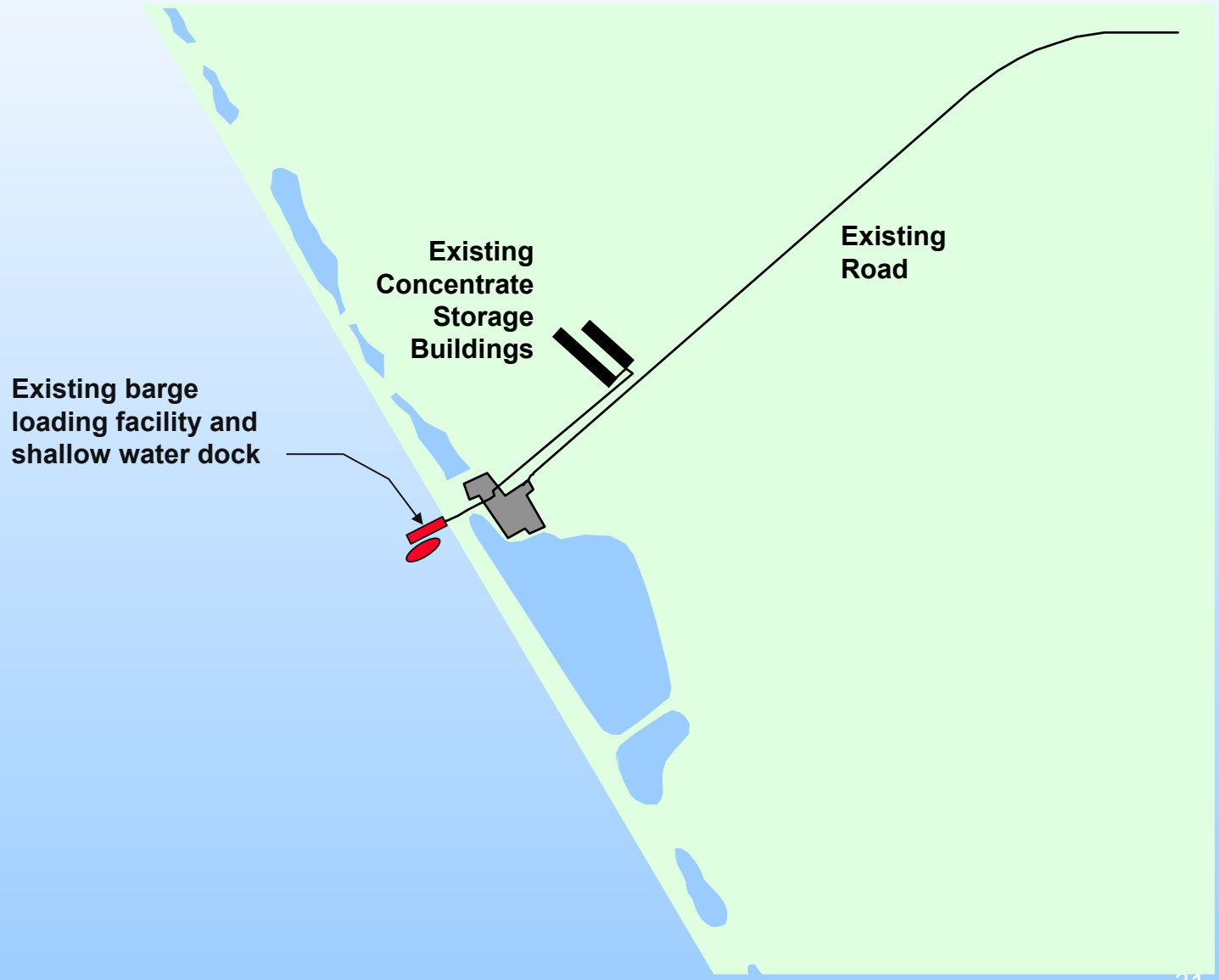
DeLong Mountain Terminal, Third Barge Alternative



DMT Third Barge Alternative Advantages and Disadvantages:

- **Advantages**
  - Lower first cost of construction
  - Uses vacant berth time at the lightering dock
  - Does not require an EPA Ocean Disposal Site Designation
  - Easier to operate and maintain, i.e. continue existing maintenance activities
  - Does not involve Corps participation and Congressional authorization

- **Disadvantages**
  - Does not eliminate double handling of concentrate over water
  - Would increase marine tug and barge traffic
  - Does not improve the DMT to better serve a 3rd party base metal mine, coal, or increased fuel and general cargo

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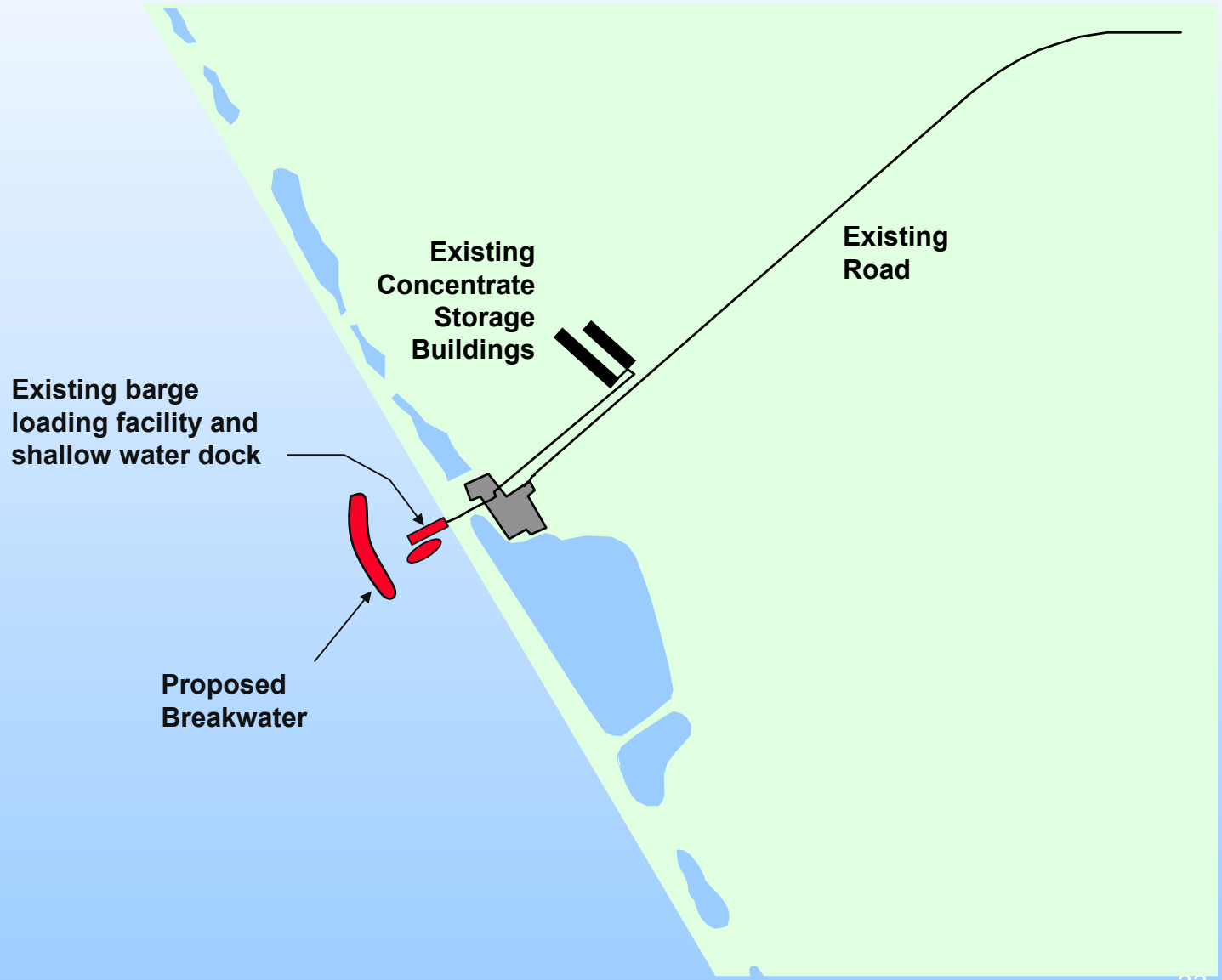
DeLong Mountain Terminal, Breakwater Alternative



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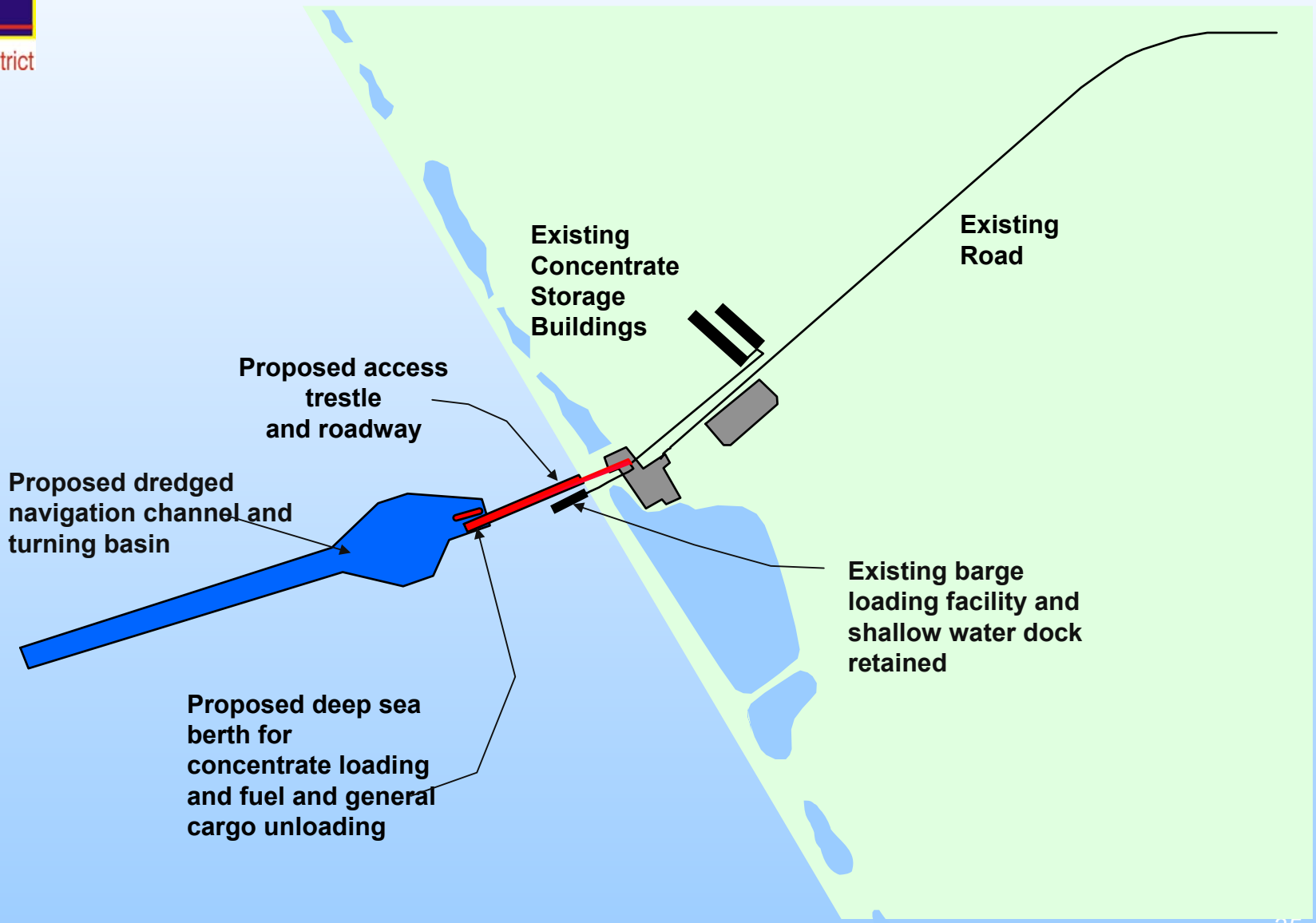
DMT Breakwater Alternative Advantages and Disadvantages:

- **Advantages**
  - Lower first cost of construction
  - Eliminates current delays at the lightering dock
  - May not require an EPA Ocean Disposal Site Designation
  - May be easier to operate and maintain, I.e. less maintenance dredging
- **Disadvantages**
  - Does not eliminate double handling of concentrate over water
  - Could increase marine tug and barge traffic were mine output to increase, i.e. more tugs and barges
  - Does not improve the DMT to better serve a 3rd party base metal mine, coal, or increased fuel and general cargo

DeLong Mountain Terminal, Trestle & Dredging Alternative



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DMT Trestle & Dredging Alternative Advantages and Disadvantages:

- **Advantages**
  - Faster shiploading
  - Increased terminal capability
  - Eliminate double handling of concentrate over water
  - Reduced marine traffic
  - Can better serve a 3rd party base metal mine, coal, and additional fuel and general cargo, but additional improvements would be required

- **Disadvantages**
  - High first cost of construction
  - EPA Ocean Disposal Site Designation

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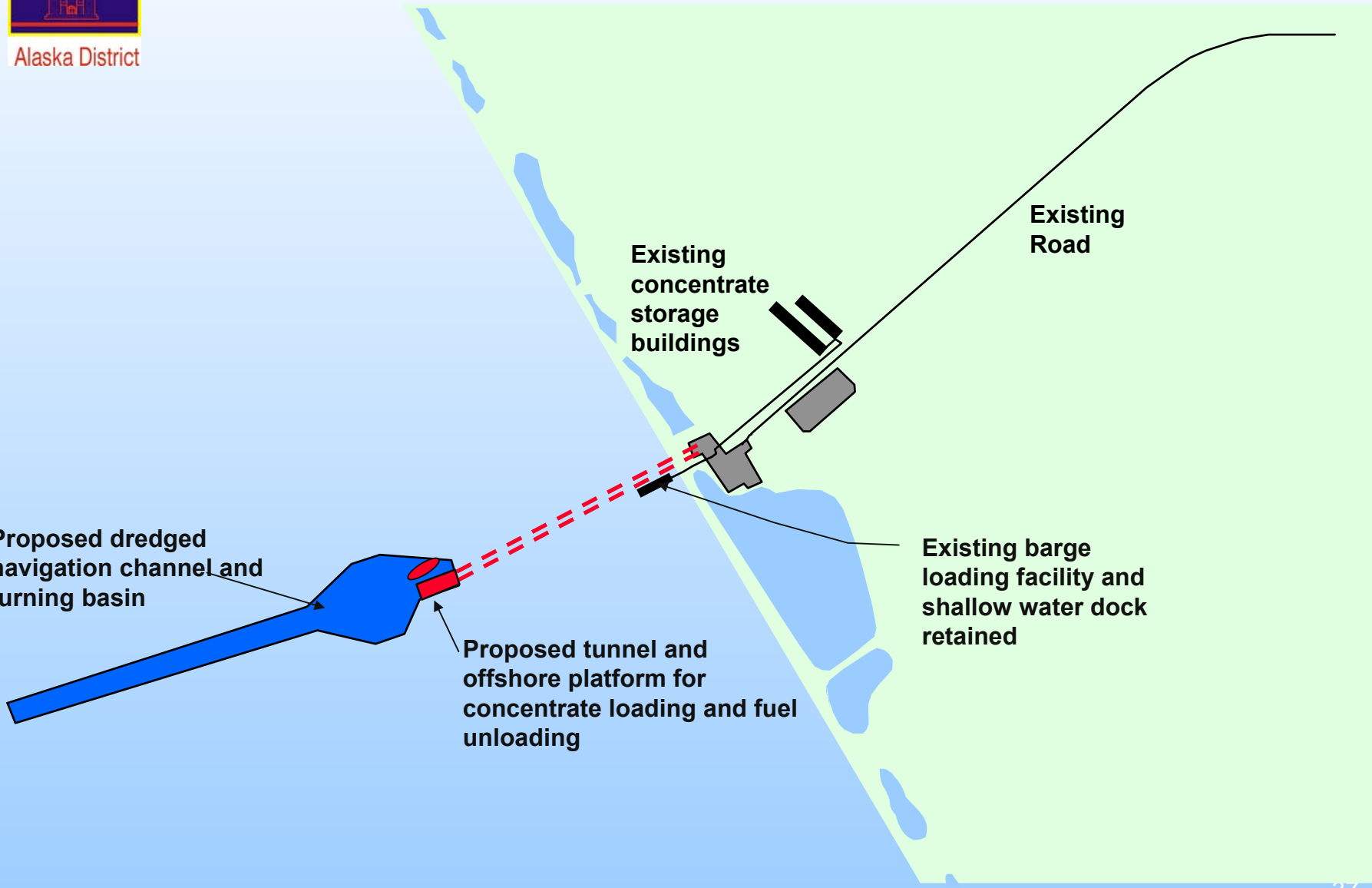
DeLong Mountain Terminal, Tunnel & Dredging Alternative



DMT Tunnel & Dredging Alternative Advantages and Disadvantages:

- **Advantages**
  - Less weather downtime
  - Faster shiploading
  - Increased terminal capability
  - Eliminate double handling of concentrate over water
  - Reduced marine traffic
- **Disadvantages**
  - High first cost of construction
  - EPA Ocean Disposal Site Designation
  - May restrict movement of 3rd party base metal mine concentrates, coal, increased fuel, or increased general cargo

Documenting Alternative Analysis

- Develop detailed alternative options
- Identify positive and negative impacts
- Develop discussion of alternatives and impacts
- Develop explanation of alternative screening
- Identify National Economic Development Plan, and if desired by sponsor, Locally Preferred Plan
- Determine Tentatively Recommended Plan

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Hydraulics and Hydrology

- **The Corps's Coastal Hydraulics Lab studies indicate the project is technically feasible, so proceeding.**
- **Coordination with economics and cost engineering for channel optimization.**
- **Developing final channel configuration.**
- **Preparing draft hydraulics appendix for the study report.**

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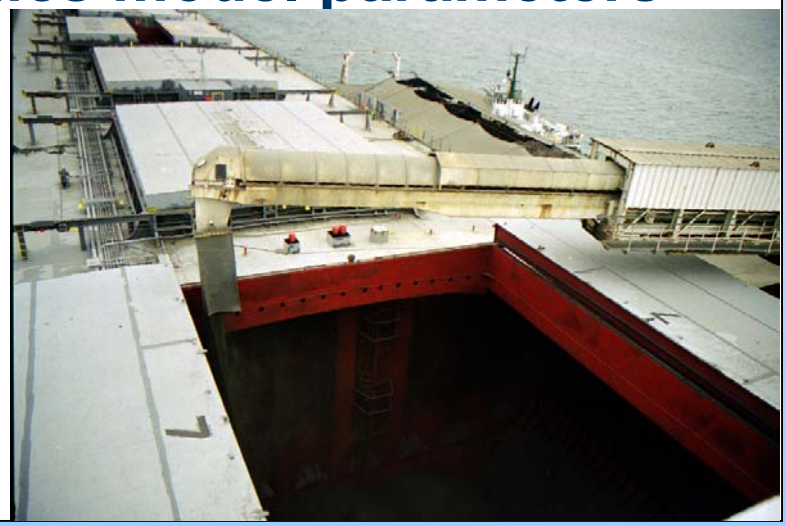
Economic Analysis

- Data collection of times and costs of current loading delays.
- Reviewed economic analysis model with Corps Headquarters in June 2001, and incorporated their comments.
- Economics delay model developed and is working.
- Economic studies conducted under Corps economic theory, I.e. time savings, reduced costs of transportation and handling, capital costs avoided.
- Compares a without project condition to a with project condition to determine benefits with 1.5 million short wet tons of concentrate produced annually.
- Project must have a benefit to cost ratio above 1.0 to be recommended by the Corps.
- NED plan must maximize net project benefits.

Economic Analysis – Future Activities

- Currently have positive economics, so proceeding
- About 20 optimization runs will evaluate various dredge depths and trestle lengths
- Fuel evaluation to be completed
- Documentation of economics model parameters
- Prepare draft economics appendix
- Perform sensitivity analysis



Environmental Impact Statement

- **Scoping of the Environmental Impact Statement (EIS) completed**
- **Field data gathering almost complete**
- **Writing up draft sections of the EIS**
- **Participating in dialogue with the EPA and Park Service**
- **Draft parts of the EIS have been sent out to interested persons for review and comment**

Environmental Impact Statement, Continued

- **Partial affected environment EIS chapter distributed in July 2002, and covers the following topics:**
- **Existing operations**
- **Status of the EIS**
- **Subsistence**
- **Land and marine vegetation**
- **Marine invertebrates**
- **Fish**
- **Terrestrial and marine mammals**
- **Birds**

Environmental Impact Statement, Continued

- **Pre-application Meetings with State of Alaska, Department of Governmental Coordination held:**
- **June 18, 2002**
- **July 9, 2002**

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Summary of Permits & Consultations

- **Federal**
  - **National Environmental Policy Act** - EIS
  - **Clean Air Act** – Air permit modification for Powerplant (thru ADEC)
  - **Clean Water Act** – Section 401 for water quality; Section 404 for fills; Section 10 for construction in navigable waters
  - **Coastal Zone Management Act of 1972** – consultation (thru DGC)
  - **Endangered Species Act of 1973** – in the range of several endangered species; probably won't need formal consultation
  - **Estuary Protection Act** - Consultation
  - **Federal Water Project Recreation Act** - Consultation
  - **Fish and Wildlife Coordination Act** – Coordination Act Report from USFWS
  - **Land and Water Conservation Fund Act** - Consultation
  - **Marine Protection, Research and Sanctuaries Act of 1972** – ocean disposal site designation by EPA under Section 102

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Summary of Permits & Consultations

- **Federal, Cont.**
  - **National Historic Preservation Act of 1972** - Consultation
  - **Magnuson-Stevens Fishery Conservation and Management Act** – Consultation
  - **Marine Mammal Protection Act** – Consultation
  - **Bald Eagle Protection Act** – Consultation
  - **Watershed Protection and Floodplain Preservation Act** – Consultation
  - **National Pollutant Discharge Elimination System** – construction SWPPP and possible permit modification for Multisector Industrial Permit (facility)
  - **Federal Executive Orders**

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Summary of Permits & Consultations

- **State**
  - **ADNR**- Modified Tidelands Lease; Temporary Use Permit for tidelands and state waters; material sale (gravel); temporary water use; modified water reservation
  - **ADEC** – Modified Air Quality Permit; Modified ODECP for fuel handling & storage; water quality certification
  - **DGC** – Coastal Consistency Review

Summary of Permits & Consultations

- **Borough/Local**
  - **Northwest Arctic Borough** – Title 9 Land Use Permit; District Coastal Management Policies
  - **Subsistence Advisory Committee** – Consultation
  - **Alaska Eskimo Whaling Commission** – Consultation
  - **Beluga Whaling Commission** – Consultation
  - **NANA Regional Corporation** - Consultation

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Project Study Plan

- **Project Management Plan**
  - **Feasibility Cost Sharing Agreement signed January 2000**
  - **Amendment 1: changed cost sharing to meet current law and Corps guidance. (April 11, 2001)**
  - **Amendment 2: updated Project Study Plan Text and Costs to $7,400,000. (August 17, 2001)**
  - **Amendment 3: updated Project Study Plan Text and Costs. Latest cost estimate is $8,800,000. (June 7, 2002)**

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Study Schedule

- Local review of partial draft of affected environment section of EIS started in July 2002
- Draft Report and Environmental Impact Statement for internal review in late 2002
- Public Review and comment period starts in the Summer of 2003
- Complete the study by late 2004 (Final EIS)

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Next Meeting

- **Next Meeting when needed**
- **This presentation will be at:**

  www.poa.usace.army.mil/en/cw/index.htm

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Thank You